

WHAT IS CLAIMED IS:

1 1. A composition comprising a haptenized tumor cell or tumor cell extract
2 comprising from about 2×10^5 to about 2.5×10^6 tumor cells or cell equivalents per dose, wherein
3 the tumor cells or cell equivalents are conjugated to a hapten and rendered incapable of growth or
4 multiplication *in vivo*.

1 2. The composition of claim 1, wherein the hapten is selected from the group
2 consisting of dinitrophenyl, trinitrophenyl, N-iodoacetyl-N'-(5-sulfonic 1-naphthyl) ethylene
3 diamine, trinitrobenzenesulfonic acid, fluorescein isothiocyanate, arsenic acid benzene
4 isothiocyanate, sulfanilic acid, arsanilic acid, dinitrobenzene-S-mustard and combinations
thereof.

1 3. The composition of claim 2, in which the hapten is dinitrophenyl.

1 4. The composition of claim 1, wherein the tumor cell extract comprises tumor cell
2 membrane components.

1 5. The composition of claim 1, wherein the tumor cell extract comprises tumor cell
2 polypeptides.

1 6. The composition of claim 1, wherein the tumor cells or tumor cell extracts
2 originate from a tumor selected from the group consisting of melanoma, ovarian cancer, colon
3 cancer, breast cancer, rectal cancer, lung cancer, kidney cancer, prostate cancer, and leukemia.

1 7. The composition of claim 6, wherein the tumor is melanoma.

1 8. The composition of claim 6, wherein the tumor is ovarian cancer.

1 9. The composition of claim 1, wherein the tumor cell or tumor cell extract has been
2 rendered incapable of growth by irradiation.

1 10. The composition of claim 1, free of any adjuvant.

1 11. A method for inducing an anti-tumor response in a mammalian patient suffering
2 from a tumor, which method comprises administering to the patient a composition comprising a
3 haptenized tumor cell or tumor cell extract comprising from about 2×10^5 to about 2.5×10^6 tumor
4 cells or cell equivalents per dose, wherein the tumor cells or cell equivalents are conjugated to a
5 hapten, and rendered incapable of growth or multiplication *in vivo*.

1 12. The method of claim 10, which further comprises administering a first dose of the
2 composition without any adjuvant.

1 13. The method of claim 10, wherein the composition is administered prior to a
2 second composition comprising an adjuvant and a tumor cell or tumor cell extract, which second
3 composition

4 a) is conjugated to a hapten, and
5 b) contains from about 2×10^5 to about 2.5×10^6 tumor cells or tumor cell equivalents.

1 14. The method of claim 13, wherein the adjuvant is selected from the group
2 consisting of *Bacille Calmette-Guerin*, Q-21, and detoxified endotoxin.

1 15. The method of claim 11, wherein the composition is administered prior to the
2 administration of cyclophosphamide.

1 16. The method of claim 14, wherein the composition is administered four to seven
2 days prior to the administration of cyclophosphamide.

1 17. The method of claim 10, wherein the tumor cells or tumor cell extracts originate
2 from a tumor selected from the group consisting of melanoma, ovarian cancer, colon cancer,
3 breast cancer, rectal cancer, lung cancer, kidney cancer, prostate cancer, and leukemia.

1 18. The method of claim 10, wherein the tumor cells or tumor cell extracts are
2 autologous.

1 19. The method of claim 10, wherein the tumor is melanoma.

1 20. The method of claim 10, wherein the patient is a human.

1 21. A method for inducing an anti-tumor response in a mammalian patient
2 suffering from a tumor, which method comprises administering to the patient:

3 (a) on the first day of the treatment, a composition comprising autologous tumor cells or
4 tumor cell extracts, which corresponds to from about 2×10^5 to about 2.5×10^6 tumor cells, free of
5 any adjuvant;

6 (b) four to seven days after initiation of the treatment, an immunomodulatory agent that
7 potentiates protective anti-tumor immunity or inhibits immune suppression, or both; and

8 (c) at least one additional composition comprising autologous tumor cells or tumor cell
9 extracts.

1 22. The method of claim 21, in which the immunomodulatory compound is
2 cyclophosphamide.

1 23. A method for inducing an anti-tumor response in a mammalian patient
2 suffering from a tumor, which method comprises administering to the patient:

3 (a) on the first day of the treatment, a composition comprising a haptenized autologous
4 tumor cell or tumor cell extract which corresponds to from about 2×10^5 to 2.5×10^6 tumor cells
5 free from any adjuvant;

- (b) four to seven days after initiation of the treatment, cyclophosphamide; and
- (c) at least one week after initiation of the treatment, a composition comprising an adjuvant and a haptenized autologous tumor cell or tumor cell extract which corresponds to from about 2×10^5 to about 1×10^7 tumor cells.

24. The method in claim 22, in which the adjuvant is *Bacille Calmette-Guerin*.